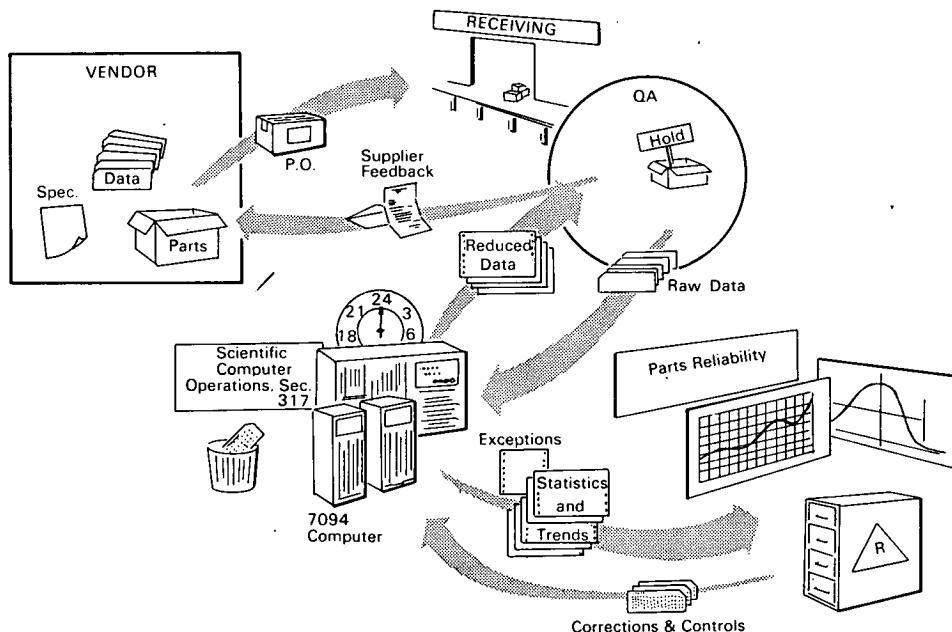


NASA TECH BRIEF



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Electronic Component Reliability Analysis by Data Reduction System



A mechanized data reduction system has been designed, to take advantage of the data handling capacity of computers, to reduce voluminous and unrelated test and performance data to a format useful for the rapid analysis of electronic component reliability. In the past such data has been provided by the many vendors involved in supplying the innumerable parts required for a space vehicle, in whatever formats convenient to the individual vendors. These ran the gamut from manual tally sheets to mechanized tabulations. Such inconsistency of formats made analysis of the

data cumbersome and costly, combining of batches of data next to impossible, and essentially denied a thorough statistical analysis.

The system has been designed to operate in three phases: the first phase has been developed for a 24-hour response time upon receipt of a production lot; phase 2 has been developed to operate on a monthly cycle; and phase 3 is planned to be bimonthly or quarterly depending on receipts volume. The figure displays the basic flow of data from a parts vendor, through the computerized analysis operation and then

(continued overleaf)

to the Quality Assurance Section for disposition of a received lot of parts (phase 1). Also shown are tabulated statistics and trends resulting from the computer operation (phases 2 and 3) being routed to the Parts Reliability Section for analysis.

Notes:

1. This system could be used to advantage wherever a multiplicity of components is involved in a project requiring close reliability forecasting.
2. Documentation for the innovation is available from:
Clearinghouse for Federal Scientific
and Technical Information
Springfield, Virginia 22151
Price \$3.00
Reference: B68-10507

Patent status:

No patent action is contemplated by NASA.

Source: Ross M. Dimm
and Duncan G. Hunt
of The Boeing Company
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